

Comparing and Ordering Fractions

If all the fractions you want to compare have the **same denominator**, then it is easy to work out the order. The fraction with the smallest numerator is the smallest fraction.

Example: $\frac{3}{16}, \frac{8}{16}, \frac{1}{16}, \frac{14}{16}, \frac{32}{16}$

In **increasing order** (\uparrow = going up) this would

be: $\frac{1}{16}, \frac{3}{16}, \frac{8}{16}, \frac{14}{16}, \frac{32}{16}$

Always check that your answer has the same number of items in the list.

In **decreasing order** (\downarrow = going down) this would

be: $\frac{32}{16}, \frac{14}{16}, \frac{8}{16}, \frac{3}{16}, \frac{1}{16}$

If the fractions have differing numerators **and** denominators, then you have to create equivalent fractions by converting all the denominators to be the same and then put them in order.

$$\frac{3}{5}, \frac{1}{5}, \frac{6}{20}$$

These can all be converted to $\frac{\quad}{20}$.

$$\frac{3}{5} = \frac{\quad}{20}$$

$$\frac{1}{5} = \frac{\quad}{20}$$

$$\frac{6}{20} = \frac{\quad}{20}$$

So,

$$\begin{aligned} \frac{3}{5} &= \frac{12}{20} \quad (\times 4) \\ \frac{1}{5} &= \frac{4}{20} \quad (\times 4) \\ \frac{6}{20} &= \frac{6}{20} \quad (\times 1) \end{aligned}$$

In increasing order this would be

$$\frac{2}{20}, \frac{6}{20}, \frac{12}{20} \quad \text{or} \quad \frac{1}{10}, \frac{6}{20}, \frac{3}{5}$$

(in their original form)

In decreasing order this would be

$$\frac{12}{20}, \frac{6}{20}, \frac{2}{20} \quad \text{or} \quad \frac{3}{5}, \frac{6}{20}, \frac{1}{10}$$

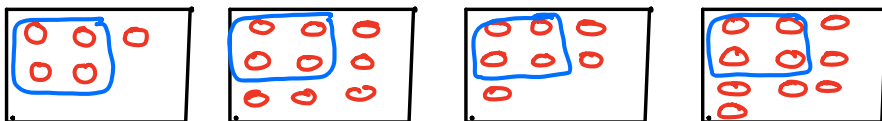
(in their original form)

If the **numerators** are all the same and the denominators are different, you need to think about what the denominators tell us about the fraction (the smaller the denominator, the bigger the piece - think pizza. One half of a pizza is more than one quarter).

$$\frac{1}{2} > \frac{1}{4}$$

So, the smallest fraction has the greatest denominator!

Example taken from Decimal workbook A p. 65.



$\frac{4}{10}$

$\frac{6}{10}$

$\frac{7}{10}$

$\frac{9}{10}$

In increasing order : $\frac{4}{10}, \frac{6}{10}, \frac{7}{10}, \frac{9}{10}$

In decreasing order : $\frac{9}{10}, \frac{7}{10}, \frac{6}{10}, \frac{4}{10}$